

## REMARKS

Claims 1-14 are pending in the present application. Claims 1, 2, 4-10, 13 and 14 stand rejected. Applicants gratefully appreciate the Examiner's indication that claims 3 and 11-12 would be allowable if amended as suggested on page 5-6 of the Final Office Action. Reconsideration of the claim rejections are respectfully requested in view of the following remarks.

### Claim Objections

On page 2 of the Final Office Action, the Examiner contends that:

Claims 1, and 13-14 are objected to because (a) it is not clear what is meant by "structural metric" and (b) "structural metric" is not defined in claims 1 and 13-14.

Applicants respectfully disagree with this contention because the term "*structural metric*" is not only defined in Applicant's specification, but also in the claims. A "structural metric" is defined in claims 1 and 13-14 to be a metric (or a measure) that is created before a physical design of a circuit, which is proportional to a routability of the circuit design model after the physical design. Further, the following excerpt from paragraph 6 of Applicants' specification clearly defines routability to be a measure.

The routability of the circuit is a measure of the relative ease of making appropriate connections on the chip implementing the design. ... [T]he relative ease of making appropriate connections on the chip implementing the design is measured by the density of wiring resources that is required per unit area of the chip. This density measurement describes the wiring congestion on the chip.

Since routability is cleared defined to be a measure, it follows that one could create a "metric" or measure that would be proportional to said routability. It further follows that an appropriate name for such a "metric" could be a "structural metric" because

the density of wires on a chip is a structural attribute of a chip. Thus, since “structural metric” is clearly defined in Applicant’s specification and in the claims, withdrawal of the objections is respectfully requested.

### **Claim Rejections - § 102**

(1) Claims 1, 4-5, 7-9, and 13-14 stand rejected under 35 U.S.C 102(e) as being anticipated by Sanie (U.S. Pub. 2004/0210856). It is respectfully submitted that Sanie is legally deficient to establish a *prima facie* case of anticipation against claims 1, 4-5, 7-9, and 13-14. At the very least, Sanie does not anticipate claims 1, 13, and 14.

By way of example, with respect to claims 1, 13 and 14, it is submitted that Sanie does not disclose or suggest “*creating a structural metric prior to physical design, the structural metric being proportional to a routability of the circuit design model after the physical design*”, as recited *inter alia* in claims 1, 13 and 14.

On page 4 of the Final Office Action, the Examiner contends that the claimed “structural metric” is best understood as the “Cell library including the Mask Cost Metric 306” in figure 3 of Sanie. However, it is respectfully submitted that Examiner’s characterization of the teachings of Sanie in this regard is misplaced. Sanie (in paragraph 5) teaches that a “[c]ell library contains detailed information regarding the cells of the specific proprietary information selected” and “[s]uch information may include a description of the logic, area, timing, power consumption, and pin descriptions, for each cell in the cell library”. The cell library, by itself and unmodified, does not contain any metrics that are a measure of the routability of a circuit design model. Sanie (in paragraph 12) modifies the cell library by adding a mask cost metric to each cell in the cell library.

However, a mask cost metric is not a measure of the routability of a circuit design model. This is shown as follows. Sanie teaches (in para. 8) a mask set is used for exposing a wafer that will provide the desired integrated circuit and (in para. 11) the cost of making a mask set has been dramatically increasing and users would like to minimize the total mask costs. In response to this, Sanie proposed (in para. 11) a method of providing a mask design that can be optimized for cost and more specifically (in para. 12) a method which includes accessing cells from a library, wherein each cell includes a mask cost metric. Clearly a mask cost metric which is a measure of the cost of making a mask set is not the same as a “structural metric” which is a measure of the routability of a circuit design model after the physical design.

Accordingly, claims 1, 13, and 14 are not anticipated by Sanie. Moreover, claims 4-5, and 7-9 are patentable over Sanie at least by virtue of their dependence from claim 1.

(2) Claims 1-2, 4-7, 9-10, and 13-14 stand rejected under 35 U.S.C 102(b) as being anticipated by Higashida (U.S. Pat. 6006023). It is respectfully submitted that Higashida is legally deficient to establish a *prima facie* case of anticipation against claims 1-2, 4-7, 9-10, and 13-14. At the very least, Higashida does not anticipate claims 1, 13 and 14.

In the prior Office Action and on page 3 of the Final Office Action, the Examiner contends that Higashida teaches (in figures 9-19) “*creating a structural metric prior to physical design.*” It is respectfully reminded that the Examiner has the burden to establish anticipation by showing how Higashida discloses each and every limitation in the claims. The Examiner has simply cited eleven figures of Higashida without any analysis of the claims or any analysis of the cited figures of Higashida with respect to the claims. It is

unclear which elements of which figures are specifically relevant to the Examiner's anticipation rejection. It is not the Applicant's burden to show how Higashida does not anticipate the claims. In any event, "*creating a structural metric prior to physical design*" does not appear to be disclosed in figures 9-19.

It is further submitted that Higashida does not disclose or suggest "*the structural metric being proportional to a routability of the circuit design model after the physical design*", as recited *inter alia* in claims 1, 13 and 14.

In the prior Office Action and on page 3 of the Final Office Action, the Examiner contends that Higashida teaches (in figures 9-19, col. 2 line 25+, col. 4, lines 5-8) "*the structural metric being proportional to a routability of the circuit design model after the physical design.*" As stated above, figures 9-19, do not teach or suggest a structural metric. Further the citation to col. 2, line 25+ of Higashida is ambiguous. Possibly this means all lines beyond 25 (such as lines 25-67) on the same page. However lines 25-26 do not mention a structural metric. Or possibly the Examiner is referring to the article entitled "Routability-Driven Fanout Optimization", which is cited on lines 25-27 of Higashida. However, the article is concerned with an efficient fanout optimization algorithm and does not mention a structural metric being proportional to a routability of a circuit design model after a physical design. With respect to col. 4, lines 5-8, the cited lines merely state that it is a goal of Higashida's invention to reduce routing area. But even assuming Higashida and Applicant's inventions have similar goals, this does not mean that the methods of achieving such goals are the same.

Accordingly, claims 1, 13, and 14 are not anticipated by Higashida. Moreover, claims 2, 4-7, and 9-10 are patentable over Higashida at least by virtue of their dependence from claim 1.

In view of the foregoing remarks, it is respectfully submitted that all the claims now pending in the application are in condition for allowance. Early and favorable reconsideration is respectfully requested.

Respectfully submitted,

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